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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Notice of Amendment

In response to the amendment filed on March 14, 2007, new claims 23-28 are acknowledged. The current rejections of the claims *stand*. The following new and reiterated grounds of rejection are set forth:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 10, 12-13, 15, 19-25 and 28 rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0117491 to Avni et al.

In regards to claims 1 and 21-22, Avni et al. disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2) (see Fig. 8); an image pick-up device 32 for

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sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device; and a radio device 34 which transmits by radio waves image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time (see Fig. 2 and paragraphs 0039-42 and 0074-0076).

In regards to claim 2, Avni et al. disclose a capsule endoscope apparatus wherein the at least two different illuminating conditions are a light-emitting amount or light-emitting time, the capsule endoscope further comprising: a setting device which sets the light-emitting amount or light-emitting time (see paragraphs 0057-64 and 0075).

In regards to claim 3, Avni et al. disclose a capsule endoscope apparatus, wherein the setting device is a storing device which stores information for setting the light-emitting amount or light-emitting time (see paragraph 0071).

In regards to claims 4-5, Avni et al. disclose a capsule endoscope apparatus wherein the at least two different illuminating conditions are a light-emitting amount or light-emitting time, the illuminating device comprises a white LED (see paragraph 0039) and wherein the illuminating device comprises an electroluminescence.

In regards to claim 6, Avni et al. disclose a capsule endoscope apparatus, wherein a signal gain of the image pick-up device is proportional to the light-emitting amount or light-emitting time (see paragraph 0719).

In regards to claims 7 and 12, Avni et al. disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body

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cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2); an image pick-up device 32 for sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device (see Fig. 2 and paragraphs 0039-42 and 0074-0076); a selecting device which extracts an image with a wide dynamic range from the two or more pieces of image data obtained by the image pick-up device upon sequentially switching the two or more light-emitting amount or light-emitting time (see Fig. 13 and paragraphs 0152-157); and a radio device 34 which transmits by radio waves the image data obtained by the selecting device (see paragraph 0036).

In regards to claims 8, 10, 13 and 15, Avni et al. disclose a capsule endoscope apparatus, wherein a luminance distribution of the image data is used as a comparison standard for extracting the image with the wide dynamic range by the selecting device (see paragraphs 0070-0074).

In regards to claim 19, Avni et al. disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating

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conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2); an image pick-up device 32 for sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device; and a radio device which transmits by radio waves the image data obtained by the image pick-up device (see Figs. 11-12).

In regards to claim 20, Avni et al. disclose a capsule endoscope apparatus, wherein the illuminating device has a plurality of light-emitting elements at different arranging positions, and the switching device selects the light-emitting element which emits light from the plurality of light emitting element and changes the property of light distribution for the illuminating light (see Figs 11-12 and paragraphs 0129-136).

In regards to claims 23-25 and 28, Avni et al. disclose a capsule endoscope apparatus, wherein at least one of the at least two different illuminating conditions and the switching order thereof preset by the switching device is set to be changeable by a radio signal (see paragraphs 0042 and 0056).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17-18 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0117491 to Avni et al. in view of EP 0912047 to Matsumoto et al.

In regards to claims 17-18, Avni et al. disclose a capsule endoscope apparatus having an illuminating device 38 for irradiating illuminating light in a body cavity, a switching device which switches illuminating conditions of the illuminating light irradiated by the illuminating device (see Figs. 6-7), presets at least two different illuminating conditions and a switching order thereof, and automatically switches the illuminating conditions from a first illuminating condition 94 corresponding to a first image acquisition cycle (T-T1) to a second illuminating condition 96 corresponding to a subsequent image acquisition cycle (T1-T2); an image pick-up device 32 for sequentially picking up an images of a subject, which is irradiated with illuminating light under the illuminating conditions which are different according to the switching by the switching device; a radio device which transmits by radio waves image data obtained by the image pick-up device but are silent with respect to an image processing device which generates one piece of combined image with an enlarged dynamic range from two or more pieces of image data. Matsumoto et al. teach of an analogous imaging apparatus comprising means for expanding the dynamic range of the images. Matsumoto et al. teach of a system wherein when a luminance level is low, the ratio of the first image signal, which has been produced during the longer exposure time, to the second image signal is increased. This results in an image demonstrating a high signal-to-noise ratio. When the luminance level is high the ratio of the second image signal, which has been produces

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during the shorter exposure time, to the first image signal is increased (see Fig. 2). This results in a synthetic image that proves a wide dynamic range, depicts a smoothly varying brightness level, and exhibits a characteristic of being seen almost natural. It would have been obvious to one skilled in the art at the time the invention was made to include a image processing device in the apparatus of Avni et al. in order to produce a single image with a large dynamic range from first and second image signals as taught by Matsumoto et al.

In regards to claims 26-27, Avni et al. disclose a capsule endoscope apparatus, wherein at least one of the at least two different illuminating conditions and the switching order thereof preset by the switching device is set to be changeable by a radio signal (see paragraphs 0042 and 0056).

Allowable Subject Matter

Claims 9, 11, 14 and 16 are allowed.

Response to Arguments

Applicant's arguments filed March 14, 2007 have been fully considered but they are not persuasive.

Applicant states Anvi et al. fail to disclose a capsule apparatus having a switching device that presets at least two different illuminating conditions. However, Anvi et al. disclose a maximum illumination time ($\Delta T4$) that is preset (see paragraph 0076). Anvi et al. further disclose a preset threshold value. When the integrated signal is equal to the threshold value, the illumination control unit ceases operation of the light sources and of the illuminating unit (see paragraph 0079). Thus, as broadly as

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claimed, Anvi et al. disclose a capsule apparatus having a switching device that presets at least two different illuminating conditions and meets the limitations of the recited claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Kasztejna whose telephone number is (571) 272-6086. The examiner can normally be reached on Mon-Fri, 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C.M. Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJK *mb*

5/21/07



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